

Town of Newtown Water and Sewer Authority (WSA)

Request for Proposal

June 10, 2011

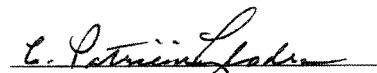
“For the design and installation of an upgrade to and integration of the WSA water and sewer SCADA* system”


*(Supervisory Control and Data Acquisition System)

Sealed proposals will be received at the office of the Financial Director located at 3 Primrose Street, Newtown, CT 06470 until but no later than 11:00 AM, Monday, July 11, 2011.

The Purchasing Authority of the Town of Newtown reserves the right to accept or reject any or all options, bids or proposals; to waive any technicality in any bid/proposal or part thereof, and to accept any bid/proposal deemed to be in the best interest of the Town of Newtown. The Town of Newtown is an Affirmative Action Employer and MBE and WBE are encouraged to bid/propose.

Mandatory Pre Bid Meetings:
June 21th & 28th at 10:00am
At the Waste Water Treatment Plant
24 Commerce Road
Newtown, CT 06470


E. Patricia Llodra
First Selectman


Robert G. Tait
Financial Director

Newtown Water and Sewer Authority, c/o Newtown Public Works
Department, 4 Turkey Hill Road, Newtown, CT 06470
Phone: (203)270-4300, Fax: (203) 426-9968 Email:
fred.hurley@newtown-ct.gov

TOWN OF NEWTOWN PURCHASING AUTHORITY
INSTRUCTIONS to BIDDERS

1. Submit bids in a sealed envelope plainly marked to identify the particular bid. It is the sole responsibility of the bidder to see that the bid is in the hands of the proper authority prior to the bid opening time.
2. Withdrawals of, or amendments to bids received later than the time and date specified for the bid opening will not be considered.
3. The Purchasing authority of the Town of Newtown reserves the right to accept or reject any or all options, bids or proposals; to waive any technicality in any bid, or part thereof, and to accept any bid deemed to be in the best interest of the Town of Newtown, Connecticut.
4. Bidders may be present at the opening of the bids.
5. Bids may be held by the Town of Newtown for a period not to exceed thirty (30) days from the opening of the bids for the purpose of reviewing the bids and investigating the qualifications of bidders prior to awarding of the contract.
6. Bids must be submitted on the Sealed Bid Request form enclosed at the end of this packet. All items must be filled in and completed. Failure to comply with this requirement may void the bid.
7. Prior to awarding any contract exceeding \$25,000.00 for the construction, alteration, or repair for any public work, a labor and/or materialmen's bond must be furnished by the person to whom the contract is awarded.
8. The Town may consider proximity of the vendor's service as a factor in determining lowest price and reserves the right to award in whole or in part to one or more vendors.
9. Bid Security when required must be by **bid bond, certified check or letter of credit** for five percent (5%) of the total bid, payable to the Town of Newtown.
10. Performance Guarantee when required must be by **performance bond, certified check or letter of credit** for one hundred percent (100%) of the total bid. Surety companies and banks must be satisfactory to the Town of Newtown.
11. The successful bidder will be required to post a Certificate of Insurance with the Town of Newtown named as additional insured in an amount as shown on the attached sheets titled "Contractor's Insurance Provisions".

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1. Introduction

The Town of Newtown Water and Sewer Authority (WSA) is seeking qualified firms with broad experience in the design, programming, installation and maintenance of sanitary sewer and potable water SCADA systems. Firms shall have demonstrated capacity in providing local governments, in Connecticut, with turnkey solutions and operations. When this project is concluded, the firm will have provided to the WSA, a complete, validated final design and installation of an upgraded SCADA system integrating command and control of both the sewer and water systems with the latest technology that will be accurate and easy to use and manage. This project will also convert major data flow from long line to radio communication.

As a starting point, in Attachment A, the WSA has included a proposed upgrade design. This design includes conversion of remote site data flow to radio communication. It is this design proposal that each firm is to validate, modify or reject and choose to offer an alternative design.

The WSA has authorized and will provide all project funding. It may be supplemented by grants should they become available but the project is not dependent on those funds. It is anticipated that the overall project costs will trigger mandatory use of prevailing wages under Connecticut State statutes. Proposers should include this assumption in all cost proposals. It is the intention of the WSA to have this project completed with a fully operational system before the end of 2011.

2. Project System Description

The WSA commenced the operation of its central sewer system on September 5, 1997. That system consists of approximately 23 miles of collection pipes, four (4) pump stations (Baldwin, Hanover, Sandy Hook, and Taunton Lake) and the central waste water treatment plant located at 24 Commerce Road, Newtown. This system also replaced a treatment facility located on the Fairfield Hills campus. That system is now part of the central collection system flowing to the main treatment plant by an interconnection.

There is a separate sewer system in the Hawleyville section of Newtown that consists of a single pump station and a mile of collection pipe. This system is pumped to the Beaverbrook Pump Station, in Bethel, and then to the waste water treatment plant in the City of Danbury.

This system serves approximately 1,200 residential, commercial and institutional customers representing 5,000 persons. There has been no major overhaul of this SCADA system since its initial operation in 1997. It has been continually managed by professional contract operators. The current operator is Aquarion Operating Systems of United Water – Suez.

The potable water system is confined to the campus and area around Fairfield Hills. It has a central pump house; three (3) wells and two (2) 500,000 gallon storage bunkers. Only Two of the three existing wells are currently active. There are plans for the possible addition of one or two

more wells. The WSA took control of this operation in August, 2004 when the assets of the system were transferred from the State of CT to the Town. The system has been managed continually by professional contract operations. The current operator is Aquarion Operating Systems of United Water-Suez.

There has been a major infrastructure overhaul of this system by the WSA since 2004, which has included structural improvements to wells, bunkers and the central pump house. Improvements have included extensive upgrades of basic electrical and process control systems.

Both the sewer and water systems have been continually maintained over the years by our contract operators. The WSA has provided funds for annual preventative maintenance and full funding for all identified capital repairs and process improvements. Single sheet diagrams of each system are included as Attachment B and C.

3. RFP Delivery Deadline and Location

The final delivery for the RFP is no later than 11:00 AM, Monday, July 11, 2011. Seven (7) copies of the proposal in a sealed container are to be delivered to the Office of the Finance Director, Town of Newtown, 3 Primrose Street, Newtown, CT, 06470. All proposals will be open at that time and one copy of each proposal will be left available for public inspection and review.

4. Project Scope:

- a. Review the proposed SCADA upgrades and integration of water and wastewater control and data acquisition systems in Attachment A and determine if they are a valid basis for your firm's proposal. This review will include examination of all available information, locations and existing equipment so that the proposer will have completely familiarized themselves with the existing systems proposed for upgrade and integration.
- b. Identify any proposed modifications or alterations to the proposed design. If modifications or alterations are identified, develop them technically and by cost. If no modifications or alterations are identified then proceed to developing the rest of your proposal following the "Submittal Requirements" in section #6.
- c. Should your proposal be accepted with or without modifications, you will execute that proposal as finally agreed to by your firm and the WSA. This will include provision of all necessary labor, materials, equipment, software or specialized services and any other form of support to give the WSA a turnkey, fully functioning and integrated SCADA system for their existing water and waste water systems.
- d. After receipt of purchase order, the firm has ninety(90) days to fully execute the project to final acceptance.
- e. Upgrade all equipment operating software with the latest O.E.M. version.

5. Schedule/Mandatory Pre Bid/Selection Process

June 3, 2011	Issue RFP
June 21, 2011	1 st Mandatory Pre-Bid Meeting at Wastewater Plant, 24 Commerce Road(10am)
June 28, 2011	2 nd Mandatory Pre-Bid Meeting at Wastewater Plant, 24 Commerce Road(10am)
July 11, 2011	Submit RFP (11:00 AM)
July 14, 2011	Shortlisted Proposals Selected for Interviews.
July 18-21, 2011	Firms Interviewed
July 22, 2011	WSA Award Recommendation to Purchasing Authority
July 25, 2011	Purchase Order Issued Upon Receipt of Insurances/Bonds
August	50% Completion
October 2011	100% Completion (Final Acceptance)
October 2012	End of One Year Support Period.

The Mandatory Pre-Bid Meeting have been scheduled as a way to guarantee that all responders have all questions answered and that any issues of modification, alterations or alternate design are fully aired before final submittal.

The selection process will commence at final submittal. The WSA members, Town support staff (IT, Communications, Public Works) and professional engineering consultants will evaluate each proposal.

The proposals will be weighed on the following items:

- Firm's direct experience and overall qualifications
- Financial stability
- Quality of overall proposal
- Completeness of overall proposal
- Plan to meet schedule
- Ability to provide ongoing response and support
- Reasonableness of cost elements from equipment to service
- References

6. Submittal Requirements

- a. **Personnel Qualifications:** The Contractor will name the team members, identify their roles and responsibilities and submit resumes or other biographical information on each. Every team member must have relevant experience in the design and installation of SCADA systems. It is preferable that this experience is in Connecticut and that it includes both water and waste water. The team members named in the proposal are to be the individuals who will perform the tasks designated in the proposal. Substitution of team members will only be allowed by written authorization of the WSA after similar biographical information has been presented to and found acceptable by the WSA. Appropriate changes will not be unreasonably withheld by the WSA.
- b. **Firm Experience:** The firm as a whole must have relevant experience in the scope of this project which includes the upgrade of a water/waste water SCADA system, integration of the two and the adaptation of radio data flow. It must have experience in Connecticut that includes successful interaction with both the CT Department of Environmental Protection and Department of Public Health. Include all your relevant projects over the past 10 years and 3 or more projects in Connecticut in the past 5 years. Include reference contact information.
- c. **Design Validation/Modification Technical Proposal:** The WSA has included a proposed design for this project. The firm will review this design in Attachment C, during the RFP process and determine if it is adequate to meet the intention of this project. If the firm validates the adequacy of the proposed design then they should so indicate and that will become the project design that they will install. If during this review process, the firm feels modifications in the design are appropriate then they should so indicate in this section and include all pertinent technical and cost data supporting those conclusions. The WSA, with professional consultants, will review those suggested changes and that review will become part of the final award decision.
- d. **Acceptance Testing Plan:** The firm should outline its plan for system start-up and the integration of all the system elements from initial testing to final, full operation. The plan should also include acceptance testing as proposed in the included design or as recommended in the firm's modified design.
- e. **Documentation Plan:** The firm will outline its plan to provide and its understanding that the WSA wants complete documentation for all system components. Both system and user documentation is required. Documentation will describe the system architecture, system logic, and operating requirements in sufficient detail that any competent operating, repair staff or outside support staff could effectively perform execute all system functions. Technical documentation should also include source codes as available and user documentation should include easy to use "cheat sheets" for reference by operators. Upon project completion, the firm will provide four (4) complete sets of "as-built" documentation operation and maintenance manuals/files/plans.

- f. **User Training Plan:** The firm will provide a plan that includes the contract operators of the WSA facilities and Town personnel from its IT and Communication departments.
- g. **System Maintenance and Support:** The firm should include in their proposal maintenance services for all system components of the SCADA system including hardware, software and communications for one year following final system acceptance. Response time during this year should be no later than next business day for non-emergency problems and no more than four (4) hours for emergency situations. The plant operator in consultation with the Public Works Director will determine emergency/non-emergency status.
- h. **Cost Proposal:** Although this project integrates the water and waste-water systems, the cost components must be identifiably separate both in your proposal, in the actual installation and your estimates for training and maintenance support requirements. The proposal should include a price for all materials and services required to accomplish the scope of work and provide the WSA with a complete, functioning turnkey SCADA system. This section should include a full description of the resources and labor rates/hour estimates for the prime and any subcontractors required for completion of the work. An itemized list including unit costs for material, equipment and software products is to be included. Any variations due to proposed modifications should also be clearly described with additional notes or other clarification. Pricing will include package software license costs, required software program development, hardware components, unit labor costs with hour estimates, training costs, service costs during the one year maintenance period and any additional proposed costs. Because this project is funded by two separate WSA accounts, all costs must be separately identified between water and waste-water. Percentage allocations are acceptable if more specific allocations are not readily available.
- i. **Financial/Legal:** Provide evidence of firm financial stability in the form of financial statements or tax returns for the past two years. These may be separately sealed and identified as proprietary information which will be returned upon request. Provide a statement that the firm and its subcontractors are not currently in litigation with the Town of Newtown. Provide a listing of any past litigation with the Town of Newtown. Provide a current list of any litigation and explain how it will not impact this project.
- j. **Non-Collusion Affidavit:** Copy as attachment D

7. General Site Accessibility

The main sewer treatment plant, at 24 Commerce Road, Newtown, will be available for visitation from 9:00 AM to 3:00 PM, Monday thru Friday, upon telephonic notification at least one (1) day in advance (203) 270-4314. Arrangements for visitation of sewer pump stations, water pump house, wells or storage bunkers are also to be made at least one (1) day in advance. If the plant cannot provide escorts, other arrangements may be made with the Public Works Department (203)270-4300, by contacting Fred Hurley, Public Works Director.

8. Available System Information/Plans/Manuals

An abbreviated set of plans for the original installation of the SCADA system at the waste water treatment plant and the updated plans for the water treatment facility have been included in the RFP packet. Full sets of these plans and the plans for other locations are available for review at the main waste water treatment plant or the Public Works Department, 4 Turkey Hill Road, Newtown, CT 06470.

In addition to plans there are also the “as built” instrumentation and controls operation and maintenance manuals”. These are available at the main waste water treatment plant.

9. Information Request

All requests for information, clarifications and follow-up to any question shall be in a written format delivered by FAX or email to Fred Hurley, Public Works Director. FAX 203-426-9968, email fred.hurley@newtown-ct.gov. The answer to all information requests will be forwarded to all active responders to the RFP. The cutoff for all information requests will be three (3) business days before submittals are due. Submittals due on a Monday will have an information request cutoff at 3:00 PM the previous Wednesday.

10 Insurance and Performance Guarantees:

Before a final contract is concluded, the firm will provide a performance guarantee by performance bond, certified check or letter of credit for one hundred percent (100%) of the total project. In addition, the firm shall also provide a labor and materialmen's bond. The firm, and as appropriate its subcontractors, shall also post a certificate of insurance naming the Town/WSA as additional assureds in the types and amounts detailed to follow:

The firm and/or its subcontractors must maintain required insurance with a carrier rated A- or better by A.M. Best. The firm and/or its subcontractors shall maintain at least the following limits of liability:

Commercial General Liability Insurance

\$1,000,000 Each Occurrence Limit (Bodily Injury and Property Damage)

\$2,000,000 General Aggregate

\$2,000,000 Ongoing & /Completed Operations Aggregate

\$1,000,000 Personal and Advertising Injury Limit

Business or Commercial Automobile Liability Insurance

\$1,000,000 Combined Single Limit per Accident

Workers' Compensation and Employers' Liability Insurance

\$100,000 Each Accident

\$100,000 Each Employee for Injury by Disease

\$500,000 Aggregate for Injury by Disease

Umbrella Liability

\$1,000,000 Occurrence/Aggregate

11 Prevailing Wage:

It is anticipated that the total value of this project may exceed the CT State limits for application of prevailing wages for municipal public works projects. The firm should assume in their proposal that were applicable, prevailing wages will apply.

Attachment A

PROPOSED SCADA SYSTEM DESIGN

Part 1 - General

1.01 DESCRIPTION

- A. Work under this contract consists of designing, furnishing, installing, programming, and testing a Supervisory Control and Data Acquisition (SCADA) System to serve the Owner's Wastewater System and Water Supply System. This work generally includes but is not limited to a front end processor (FEP), computer, software and two workstations located at the wastewater treatment plant connected by fiber optic cable to four in-plant programmable logic controllers (PLCs), six remote terminal units (RTUs) at other wastewater sites, and three RTUs at water supply sites.
- B. Telemetric communication between the FEP and the nine remote sites shall be incorporated into the Town's existing trunk radio system. Repeating stations, if required, are not included in this contract.
- C. The SCADA system will replace the existing system that consists of a Dell computer running Windows 2000 and Intellution FIX-32 and a Bristol Babcock 3332 Redundant Data Concentrator located in the administration building connected by fiber optic cable to four Bristol Babcock 3330 PLCs located in the headworks building, clarifier building, filter building, and at the oxidation ditch; and connected by dial-up phone lines to four Bristol Babcock 3330 PLCs located at wastewater pump stations at Sandy Hook, Taunton Lake Road, Baldwin Road and Hanover Road, and connected by leased phone line to one Allen-Bradley PLC located at the Hawleyville wastewater pump station; and one stand-alone Allen-Bradley PLC located in the Fairfield Hills Water Treatment Plant.
- D. The SCADA system will be expanded to include RTUs at, as part of the Wastewater Treatment System, the Fairfield Hills Parshall flume, and, as part of the Water Supply System, Well House #7 and the Water Storage Tanks (Bunkers).
- E. Upgrade all equipment operating software with the latest O.E.M version.

Part 2 – Products

2.01 REMOTE TERMINAL UNITS (RTUs)

RTUs shall be Motorola ACE3600 each supplied with a Model Radio appropriate for the frequency, Model 3640 CPU, AC power supply with battery charger, 10 Ah 12V

backup battery, and sufficient I/O for each location (refer to Schedule A), plus 20% spares of each type used. Each RTU base shall include a minimum of 2 spare slots.

2.02 PROGRAMMABLE LOGIC CONTROLLERS (PLCs)

The PLC Hardware to be supplied for the Headworks Bldg., Clarifier Bldg., Filter Building and outside on the Oxidation Ditch are to be Direct Logic PLC Model DL 205 with D2-260 CPUs, H2-ECOM100 Ethernet Communications modules and sufficient I/O for each location (refer to Schedule A), plus 20% spares of each type used. Each PLC base shall include a minimum of 2 spare slots. High density I/O may be used along with pre-wired I/O cables and remote ZipLink terminations to preserve rack space. A hardened 10/100MB Ethernet switch with both fiber optic and CAT-5 connections is to be provided at each site to connect the PLC to the fiber optic Ethernet Network.

2.03 CONTROL CABINETS

Control Cabinets shall be stainless steel, NEMA 4X enclosures. Existing control cabinets shall be used where possible by fitting new equipment in the space currently occupied by the Bristol Babcock 3330 PLCs. Subpanels shall be used where extra space is required.

2.04 FIBER OPTIC CABLE

The contractor is to furnish and install all necessary fiber optic cable from the Administration Building to the four in plant locations. The fiber optic cable is to have four, 50 um, multi-mode fibers in a heavy-duty indoor/outdoor cable rated for installation in damp environments. The installation is to be in a "star" configuration from the Administration Building. The cable is to be Belden #B9A039T or an approved equivalent.

The fiber optic cable is to have four, 50 um, multi-mode fibers in a heavy-duty indoor/outdoor cable rated for installation in damp environments. The cable is to be Belden #B9A039T or approved equal. At the Administration Building, all fibers will be connected to a fiber optic patch panel Model #WCH-06P, as manufactured by Corning Cable Systems or approved equal and two fibers from each cable jumped with fiber optic patch cables to a full-duplex network switch.

The switch will be a rack mounted, modular mixed media, 10/100 Mbps switch Model #LE1416A, as manufactured by Black Box Corporation or an approved equal. Modules for both "ST" and CAT-5 connections are to be provided as required.

2.05 FRONT END PROCESSOR (FEP)

Furnish and install a Motorola ACE3600 Front End Processor (FEP) in the control cabinet at the Administration Building and connect it to the Ethernet backbone. This will provide the Motorola Radio Telemetry System Network Communication to the nine Motorola ACE3600 RTUs at the remote sites.

The FEP Hardware to be supplied in the control cabinet at the Administration Building is to be the ACE3600 Front End Processor as manufactured by Motorola. The FEP is to be supplied with a Model Radio (depending on frequency), Model 3640 CPU, AC power

supply with battery charger, a 10 Amp-Hour 12V backup battery and one 16 Pt. Digital Input Module. This is to for Administration Building Fire and Intrusion Alarms as well as HVAC Status.

2.06 OPERATOR TOUCH PANEL

With the exception of the Oxidation Ditch, an operator touch panel is to be mounted in the cabinet door of each PLC. This operator touch panel is to be a Model EA7-S6C, C-more 6" graphic panel(or more current) with 256 Colors as manufactured by Koyo.

Also, with the exception of the Fairfield Hills Partial Flume, Well House #7 and the Distribution Water Storage Tanks, an operator touch panel is to be mounted in the cabinet door of each RTU. This operator touch panel is to be a Model EA7-S8C, C-more 8" graphic panel with 65,536 Colors as manufactured by Koyo.

2.07 COMPUTER AND WORKSTATIONS

Computer [SCADA Manager?] and workstations shall be Dell or approved equal.

2.08 SOFTWARE

Windows Server 2008, XP Professional, and GE Automation's latest version of Proficy HMI/SCADA.

The reports will be generated as Microsoft Excel spread sheets using the latest version of XLReporter software from SyTech, Inc. or approved equal.

Alarm Notification Software shall be WIN-911 Direct Connect, most current and compatible Version, as provided by Specter Instruments, Austin, TX.

2.09 FLOAT BACKUP PUMP CONTROLS

Floats shall be Flygt Model ENM-10, mechanically activated (no mercury), SPDT switches, furnished with cables long enough to reach from the wet well to the pump control panel. Intrinsic safety barriers provided in the pump control panel for each float shall be B/W Controls, Series 5510 or approved equal.

2.10 UNINTERRUPTIBLE POWER SUPPLY (UPS)

UPS shall be Model #SU1500RTXLUA as manufactured by Tripp Lite, Chicago, IL.

2.11 POWER MONITORS

Three-phase power-monitoring devices installed at each pump station shall be Model UPC as manufactured by Load Controls Inc. or approved equal.

2.12 ANTENNAE

Antennae shall include a high-gain directional antenna as manufactured by Motorola mounted on a 20-ft mast, antenna cable and lightning arrester.

Part 3 - Execution

3.01 CONDITIONS

Contractor shall be responsible for supplying all labor, materials, equipment, and services necessary to provide a complete, operational control and monitoring system complying with all the performance criteria and standards set forth in these specifications. All materials shall be UL approved and all work shall comply with the latest edition of the National Electrical Code, the requirements of the Connecticut State Building Code and all local rules, regulations, and ordinances.

Contractor shall coordinate his work with the Owner's designated staff. All work shall be planned and performed in such manner as to minimize periods of loss of operational control and monitoring when transitioning from the old system to the new system. All system components shall be tested prior to installation, all control programming shall be thoroughly tested, and as much physical installation as possible should be performed prior to removing the current system from operation.

3.02 SUBMITTALS

Contractor shall submit for approval within 45 days of Notice to Proceed: project schedule, bills of materials, electric control schematics, and fiber optic and radio system architecture drawings.

3.03 DESIGN

3.04 INSTALLATION

- A. At the Administration Building furnish and install a Motorola ACE3600 Front End Processor (FEP) in the control cabinet and connect it to the Ethernet backbone. This will provide the Motorola Radio Telemetry System Network Communication to the nine Motorola ACE3600 RTU's at the remote sites. Furnish and install a fiber optic patch panel and an Ethernet Switch utilizing fiber optic converters in the Administration Building control cabinet in place of the Bristol Babcock 3332 Redundant Data Concentrator.
- B. At the Headworks Building, Clarifier Building, Filter Building, and Oxidation Ditch replace each of the existing controllers with RTUs with I/O as listed in Schedule A. Furnish and install UPS and hardened 10/100MB Ethernet switch with both fiber optic and CAT-5 connections to connect the PLC to the fiber optic Ethernet Network at each location. Furnish and install a 6-inch Operator Touch Panel in the door of the Control Panel at each location except the Oxidation Ditch.

Schedule A – Inputs/Outputs (I/O)

Wastewater Treatment Plant Process I/O

Headworks Building

Analog Inputs (4-20ma)

Influent Flow (0-4 MGD)

Influent pH (0-14)

Analog Outputs (4-20ma)

Influent Sampler Pacing (% of Inf. Flow)

Digital Inputs (24 VDC)

Influent Channel High Level Alarm

Fine Screen System Running

Position Switch Failure Alarm

Overload Shutdown Alarm

Grit Chamber Agitator Run Status

Grit Pump Lead Select

Grit Pump #1 Run Status

Grit Pump #2 Run Status

Grit Pump Room High Level

Explosive Atmosphere Alarm

Oxygen Deficiency Alarm

Chlorine Gas Alarm

Makeup Air Low Alarm

Alarm Acknowledge P.B.

Alarm Reset P.B.

Alarm Test P.B.

Digital Outputs (24 VDC)

Grit Pump #1 Motor Start

Grit Pump #2 Motor Start

Interior General Alarm Beacons & Horn

Exterior General Alarm Beacons & Horn

Critical Alarm Beacon & Horn

Oxidation Ditch

Analog Inputs (4-20ma)

Oxidation Ditch #1 Level (0-2,4 Ft)

Oxidation Ditch #2 Level (0-2,4 Ft)

Aerator Motor #1 Power (0-60 kW)

Aerator Motor #2 Power (0-60 kW)

Oxidation Ditch #1 pH (0-14)

Oxidation Ditch #2 pH (0-14)

Oxidation Ditch #1 DO (0-10 PPM)(oxic and anoxic)

Oxidation Ditch #2 DO (0-10 PPM)(oxic and anoxic)

Analog Outputs (4-20ma)

None!

Digital Inputs (24 VDC)

Anoxic Mixer #1 Run Status

Anoxic Mixer #1 Low Oil Level

Anoxic Mixer #2 Run Status

Anoxic Mixer #2 Low Oil Level

Digital Outputs (24 VDC)

Exterior General Alarm Beacon

Aeration Motor #1 Stop

Aeration Motor #1 Start Low

Anoxic Mixer #1 Start

Aerator Motor #1 Run Status (Low Speed)	Anoxic Mixer #1 Stop
Aerator Motor #1 Run Status (High Speed)	Aeration Motor #2 Stop
Aerator Motor #1 Low Oil Pressure	Aeration Motor #2 Start Low
Aerator Motor #1 High Temperature	Anoxic Mixer #2 Start
Aerator Motor #2 Run Status (Low Speed)	Anoxic Mixer #2 Stop
Aerator Motor #2 Run Status (High Speed)	
Aerator Motor #2 Low Oil Pressure	
Aerator Motor #2 High Temperature	
Alarm Acknowledge P.B.	
Alarm Reset P.B.	
Alarm Test P.B.	

Clarifier Building

Analog Inputs (4-20ma)

Oxidation Ditch #1 Flow (0-300 GPM)
 Oxidation Ditch #2 Flow (0-300 GPM)
 Scum Box Level (0-10 Ft)
 Aerator Motor #1 VFD Speed (0-100%)
 Aerator Motor #2 VFD Speed (0-100%)
 Oxidation Ditch #1 DO (0-10 PPM)
 Oxidation Ditch #2 DO (0-10 PPM)

Analog Outputs (4-20ma)

RAS Pump #1 Speed Control (0-100 %)
 RAS Pump #2 Speed Control (0-100 %)
 WAS Pump #1 Speed Control (0-100 %)
 WAS Pump #2 Speed Control (0-100 %)
 Swing (RAS/WAS) Pump Speed (0-100 %)
 Scum Pump #1 Speed Control (0-100 %)
 Scum Pump #2 Speed Control (0-100 %)
 Aerator Motor #1 VFD Speed (0-100%)
 Aerator Motor #2 VFD Speed (0-100%)

Digital Inputs (24 VDC)

Clarifier #1 Run Status
 Clarifier #1 Motor High Torque
 Clarifier #2 Run Status
 Clarifier #2 Motor High Torque
 Dewatering Wet Well High Level
 Dewatering Wet Well Low Level
 Dewatering Wet Well Low-Low Level
 Basin Dewatering Pump Run Status
 Basement High Level
 RAS Pump #1 Auto Mode
 RAS Pump #1 Run Status
 RAS Pump #2 Auto Mode
 RAS Pump #2 Run Status
 WAS Pump #1 Auto Mode
 WAS Pump #1 Run Status
 WAS Pump #2 Auto Mode
 WAS Pump #2 Run Status
 Swing Pump (RAS/WAS) Auto Mode
 Swing Pump (RAS/WAS) Selector

Digital Outputs (24 VDC)

Basin Dewatering Pump Start
 RAS Pump #1 Start
 RAS Pump #2 Start
 WAS Pump #1 Start
 WAS Pump #2 Start
 Swing Pump (RAS/WAS) Start
 Scum Pump #1 Start
 Scum Pump #2 Start
 Interior General Alarm Beacons & Horn
 Exterior General Alarm Beacons & Horn
 Aerator Motor #1 VFD Start
 Aerator Motor #2 VFD Start

Swing Pump (RAS/WAS) Run Status
Scum Pump #1 Auto Mode
Scum Pump #1 Run Status
Scum Pump #2 Auto Mode
Scum Pump #2 Run Status
Alarm Acknowledge P.B.
Alarm Reset P.B.
Alarm Test P.B.
Aerator Motor #1 VFD Run Status
Aerator Motor #1 VFD Fault
Aerator Motor #1 VFD Bypass
Aerator Motor #1 VFD Remote Mode
Aerator Motor #1 VFD Local Mode
Aerator Motor #1 VFD Drive?
Aerator Motor #1 VFD Bypass Run
Aerator Motor #1 VFD Heater Run
Aerator Motor #2 VFD Run Status
Aerator Motor #2 VFD Fault
Aerator Motor #2 VFD Bypass
Aerator Motor #2 VFD Remote Mode
Aerator Motor #2 VFD Local Mode
Aerator Motor #2 VFD Drive?
Aerator Motor #2 VFD Bypass Run
Aerator Motor #2 VFD Heater Run

Filter Building

Analog Inputs (4-20ma)

WAS Pump #1 Speed Control from Clarifier Bldg. (0-100 %)
WAS Pump #2 Speed Control from Clarifier Bldg. (0-100 %)
SAS Pump #1 Speed Control from Clarifier Bldg. (0-100 %)
Scum Pump #1 & #2 Speed Control from Clarifier Bldg. (0-100 %)
Thickener Belt Wash Water Flow (0-400 GPM)
Waste Activated Sludge Flow (0-400 GPM)
Thickened Sludge Storage Level (0-20 Ft)
Thickened WAS Flow (0-500 GPM)
Plant Drain Sump Level (0-20 Ft)
Plant Drain Pumps Flow (0-1200 GPM)
Clear Well pH (0-14)
Plant water Flow (0-300 GPM)
Sodium Hypochlorite Storage Tank Level (0-6.8 Ft)
Sodium Hypochlorite Metering Pump #1 Speed (0-2 RPM)
Sodium Hypochlorite Metering Pump #2 Speed (0-2 RPM)
Sodium Hypochlorite Metering Pump #3 Speed (0-2 RPM)
Sodium Hypochlorite Metering Pump #4 Speed (0-2 RPM)
Alum Solution Storage Tank Level (0-12 Ft)

Alum Metering Pump #1 Speed
Alum Metering Pump #2 Speed
Sodium Hydroxide Storage Tank Level (0-10 Ft)
Sodium Hydroxide Metering Pump #1 Speed
Sodium Hydroxide Metering Pump #2 Speed
U.V. Disinfection Bank MAA Intensity (4-16)
U.V. Disinfection Bank MAB Intensity (4-16)
U.V. Disinfection Bank MAC Intensity (4-16)

Analog Outputs (4-20ma)

Effluent Sampler Control
U.V. Disinfection Control (Plant Inf. Flow)
Sodium Hydroxide Metering Pump #1 Speed Control
Sodium Hydroxide Metering Pump #2 Speed Control
Sodium Hydroxide Metering Pump #3 Speed Control
Sodium Hydroxide Metering Pump #4 Speed Control
Alum Metering Pump #1 Speed Control
Alum Metering Pump #2 Speed Control
Sodium Hydroxide Metering Pump #1 Speed Control
Sodium Hydroxide Metering Pump #2 Speed Control

Digital Inputs (24 VDC)

Gravity Belt Thickener Run Status
Common Thickener Process Alarm
WAS Pump #1 Select
WAS Pump #2 Select
SAS Pump #1 select
Scum Pump #1 Start Select
Scum Pump #2 Start Select
Thickener Belt Wash Pump Run Status
Thickened WAS Pump #1 Auto Mode
Thickened WAS Pump #2 Auto Mode
Thickened WAS Pump #1 Run Status
Thickened WAS Pump #2 Run Status
Thickened Sldg. Strg. Explosive Alarm
Plant Drain Pump #1 Auto Mode
Plant Drain Pump #2 Auto Mode
Plant Drain Pump #1 Run Status
Plant Drain Pump #2 Run Status
Clear Well Basin #1 High Level
Clear Well Basin #1 Low Level
Clear Well Basin #2 High Level
Clear Well Basin #2 Low Level
Plant Water Pump #1 Auto Mode
Plant Water Pump #2 Auto Mode
Plant Water Pump #3 Auto Mode

Digital Outputs (24 VDC)

RAS/WAS Pump Run Status, Clarifier Bldg.
Scum Pump 1&2 Run Status, Clarifier Bldg.
Thickened WAS Pump #1 Stop
Thickened WAS Pump #2 Stop
Plant Drain Pump #1 Start
Plant Drain Pump #2 Start
Plant Water Pump #1 Start
Plant Water Pump #2 Start
Plant Water Pump #3 Start
Sodium Hypo. Metering Pump #1 Start
Sodium Hypo. Metering Pump #2 Start
Sodium Hypo. Metering Pump #3 Start
Sodium Hypo. Metering Pump #4 Start
Alum Metering Pump #1 Start
Alum Metering Pump #2 Start
Sodium Hydroxide Metering Pump #1 Start
Sodium Hydroxide Metering Pump #2 Start
Interior General Alarm Beacons
Exterior General Alarm Beacon
Critical Alarm Beacon
Admin. Bldg. Interior General Alarm
Beacons & Horn

Plant Water Strainer High Diff. Press. Alarm
Plant Water Pump #1 Run Status
Plant Water Pump #2 Run Status
Plant Water Pump #3 Run Status
Plant Water Pressure Low-Low Limit Sw.
Plant Water Pressure Low Limit Sw.
Plant Water Pressure Med Limit Sw.
Plant Water Pressure High Limit Sw.
Filter Backwash Pump #1 Status
Filter Backwash Pump #2 Status
Filter Backwash Pump #3 Status
Filter #1 High Level Limit Sw.
Filter #2 High Level Limit Sw.
Filter #3 High Level Limit Sw.
U.V. Disinfection Unit #1 Run Status
U.V. Disinfection Unit #2 Run Status
U.V. Disinfection Unit #3 Run Status
U.V. Disinfection Major Alarm
U.V. Disinfection Minor Alarm
Sodium Hypochlorite Metering Pump #1 Run Status
Sodium Hypochlorite Metering Pump #2 Run Status
Sodium Hypochlorite Metering Pump #3 Run Status
Sodium Hypochlorite Metering Pump #4 Run Status
Alum Metering Pump #1 Run Status
Alum Metering Pump #2 Run Status
Sodium Hydroxide Metering Pump #1 Run Status
Sodium Hydroxide Metering Pump #2 Run Status
Polymer Blending System Run Status
Polymer Metering System Run Status
Permanganate System Run Status
Permanganate System General Alarm
Permanganate System Hi-Hi Level Alarm
Permanganate Metering Pump Run Status
Basement Sump High Level Alarm
Toxic Gas (Chlorine) Alarm
Low Building Temperature Alarm
Loss of Normal Power
Generator Running
Auto Transfer Switch #1 Status
Auto Transfer Switch #2 Status
Alarm Acknowledge P.B.
Alarm Reset P.B.
Alarm Test P.B.
Intrusion Alarm
Fire Alarm

Sandy Hook, Taunton Lake, Baldwin and Hanover Pump Stations

Analog Inputs (4-20ma)

Wet Well Level (0-20.0 FT)
Discharge Flow (0-300 GPM)
Station Power (New)

Analog Inputs (4-20ma)

None!

Digital Inputs (24 VDC)

Motor #1, Moisture in the Oil Alarm
Motor #1, High Temp. Alarm
Pump #1, Failure Alarm
Pump #1, Shaft Seal Fail Alarm
Pump #1, Potential Seal Fail Alarm
Backup Generator Fail Alarm
Intrusion Alarm
Motor #2, Moisture in the Oil Alarm
Motor #2, High Temp Alarm
Pump #2, Failure Alarm
Pump #2, Shaft Seal Fail Alarm
Pump #2, Potential Seal Fail Alarm
Power Failure Alarm
Smoke/Fire Alarm
Pump #1 Run Status
Pump #2 Run Status
Generator Run Status
Combustible Gas (Future)
Toxic Gas (Future)
Pump #1 Auto
Pump #1 Hand
Pump #2 Auto
Pump #2 Hand
SCADA Control Mode (New)
Pump #1 Lead Select (New)
Pump #2 Lead Select (New)
Backup System Active (New)
High Wet Well Float (New)
Low Wet Well Float (New)
Generator, High Water Temp. (New)
Generator, Low Oil Pressure (New)
Generator, Over-Crank (New)
Generator, Over-Speed (New)

Digital Outputs (24 VDC)

Pump #1 Start
Pump #2 Start
Low Wet Well Level Alarm
High Wet Well Level Alarm
Pump #1 Failure Alarm
Pump #2 Failure Alarm
Generator Fault Reset (New)
Generator Test Start (New)

Hawleyville Pump Station

Analog Inputs (4-20ma)

Wet Well Level (0-20 FT)
Discharge Flow (0-300 GPM)
Station Power (New)

Digital Inputs (120 VAC)

Pump #1 Off
Pump #1 Auto
Pump #2 Off
Pump #2 Auto
Pump #3 Off (Future)
Pump #3 Auto (Future)
Pump #1 Run Status
Pump #2 Run Status
Pump #3 Run Status (Future)
Motor #1, Moisture
Motor #2, Moisture
Motor #3, Moisture (Future)
Auto Pump Lead Select
Pump #1 Lead Select
Pump #2 Lead Select
Pump #3 Lead Select
Intrusion Alarm
Generator Run Status
Backup Generator Fail Alarm
Smoke/Fire Alarm
Alarm Reset P.B.
Horn Silence P.B.
Backup High Level (Float)
Backup Low Level (Float)
Motor Starter #1, Overload
Motor Starter #2, Overload
Motor Starter #3, Overload (Future)
Emergency Power Transfer Switch
Flow Meter Bypass Switch
Panel Power Status
Soft Starter #1 Overload
Soft Starter #2 Overload
Soft Starter #3 Overload (Future)
Soft Starter #1 Selected
Soft Starter #2 Selected
Soft Starter #3 Selected (Future)
Soft Starter #1 Up to Speed
Soft Starter #2 Up to Speed
Soft Starter #3 Up to Speed (Future)
SCADA Control Mode (New)
Backup System Active (New)

Digital Outputs (Dry Contact)

Pump #1 Start
Pump #2 Start
Pump #3 Start (Future)
Pump #1 Lead Indicator
Pump #2 Lead Indicator
Pump #3 Lead Indicator (Future)
Pump #1 Off Indicator
Pump #2 Off Indicator
Pump #3 Off Indicator (Future)
Wet Well High Level Indicator
Wet Well Low Level Indicator
Alarm Horn/Light
Wet Well Hi-Hi Level Indicator
Lead Pump Off Alarm Horn/Light
All Pumps Off Alarm Horn/Light
Pump #1 Overload Indicator
Pump #2 Overload Indicator
Pump #3 Overload Indicator (Future)
Pump #1 Motor Failure Indicator
Pump #2 Motor Failure Indicator
Pump #3 Motor Failure Indicator (Future)
Emergency Power Indicator
Generator Fault Reset (New)
Generator Test Start (New)

Generator, High Water Temp. (New)
Generator, Low Oil Pressure (New)
Generator, Over-Crank (New)
Generator, Over-Speed (New)

Fairfield Hills Water System

Water Treatment Plant

Analog Inputs (4-20ma)

Clearwater Tank Level (0-46.133 Ft)
Booster Pump #1 Speed Feedback (0-100%)
Booster Pump #2 Speed Feedback (0-100%)
Storage Tank Level (0-17 Ft)
Chlorine Residual Analyzer (0-5 mg/L)
Clearwater Tank pH (0-14)
Well #3 Flow
Booster Pump #1 & #2 Flow
Station Power (New)

Analog Outputs (4-20ma)

Booster Pump #1 Speed Control (0-100%)
Booster Pump #2 Speed Control (0-100%)
Chlorine Residual to Recorder (0-5 mg/L)

Digital Inputs (120 VAC)

Booster Pump #1 Auto Mode
Booster Pump #1 Manual Mode
Booster Pump #1 VFD Remote Mode
Booster Pump #1 Drive Ready Fault
Booster Pump #1 Run Status
Booster Pump #1 Bypass Feedback
Booster Pump #1 Bypass Selector
Booster Pump #1 Drive Fault
Booster Pump #2 Auto Mode
Booster Pump #2 Manual Mode
Booster Pump #2 VFD Remote Mode
Booster Pump #2 Drive Ready Fault
Booster Pump #2 Run Status
Booster Pump #2. Bypass Feedback
Booster Pump #2 Bypass Selector
Booster Pump #2 Drive Fault
Well #3, Pump Auto Mode
Well #3, Pump Motor Fault
Well #3, Pump Run Status
Well #7, Pump Auto Mode
Well #7, Pump Motor Fault
Well #7, Pump Run Status
Well #8 Pump Auto Mode (Future)
Well #8 Pump Motor Fault (Future)

Relay Outputs (120 VAC)

Booster Pump #1 Run Command
Booster Pump #2 Run Command
Well Pump #3 Run Command
Well Pump #7 Run Command
Well Pump #8 Run Command
Booster Pump #1 Bypass Enable
Booster Pump #2 Bypass Enable
Booster Pump #1 Drive Fault Light
Booster Pump #2 Drive Fault Light
Well Pump #3 Motor Fault Light
Well Pump #7 Motor Fault Light
Well Pump #8 Motor Fault Light
Well Pump #3, Motor Fault (to Autodialer)
Well Pump #7, Motor Fault (to Autodialer)
Well Pump #8, Motor Fault (Future)
Booster Pumps Motor Fault (to Autodialer)
Clearwater Tank High Level (to Autodialer)
Storage Tank High Level (to Autodialer)
Chlorine Residual High Level (to Autodialer)
Generator Fault Reset (New)
Generator Test Start (New)

Well #8 Pump Run Status (Future)
Clearwater Tank, Low Level Float
Clearwater Tank, Lo-Lo Level Float
Clearwater Tank, High Level Float
Clearwater Tank, Hi-Hi Level Float
Generator, High Water Temp. (New)
Generator, Low Oil Pressure (New)
Generator, Over-Crank (New)
Generator, Over-Speed (New)

Well House #7 (New)

Analog Inputs (4-20ma)

Flow Rate
Flow Total
Station Power

Digital Inputs (24 VDC)

Fire Alarm
Intrusion

Well House #8 (Future)

Analog Inputs (4-20ma)

Flow Rate
Flow Total
Station Power

Digital Inputs (24 VDC)

Fire Alarm
Intrusion

Distribution Storage Tanks (New)

Analog Inputs (4-20ma)

Storage Tank Level (0-17 Ft)
Chlorine Residual (0-5 mg/L)
Water pH (0-14)

Digital Inputs (24 VDC)

Fire Alarm
Intrusion

Schedule B

Duplex Pump Station Backup Float Control

The Backup Float Control is to work in conjunction with the RTU Duplex Pump Control. It will consist of three Wet Well Floats in addition to the existing analog level transmitter. Two selector switches are to be added to the control panel door. The "Float/SCADA" switch will

select the mode of control. The "Lead Pump" switch will select the lead pump or auto pump alternation.

In Float Mode

1. The bottom float will turn off all pumps and alternate the lead pump.
2. The middle float will start the lead pump.
3. The top float will start the lag pump & initiate a "High Float Alarm".

In SCADA Mode

1. The bottom float will turn off all pumps & initiate a "Low Float Alarm".
2. The middle float has no function in this mode.
3. The top float will activate the "Backup Pump Control" along with an alarm.
4. Between the top & bottom float levels, the RTU will provide lead/lag duplex pump control as a function of the analog Wet Well Level. It will also initiate High & Low Wet Well Alarms.
5. If the "Backup Pump Control" is activated, the lead pump is started follow by the lag pump after a settable time delay, unless the level falls below the bottom float.

Floats and Installation

1. The floats are to be Flygt Model ENM-10, mechanically activated (no mercury), SPDT switches with cables long enough to reach from the wet well to the pump control panel.
2. The float cables are to be clamped to a 1" Schedule 80 PVC pipe, mounted to the wet well wall with stainless steel standoff brackets. Float location and height is to be determined by Owner.
3. The float cables are to be long enough to run from the wet well to the control building in 1 ½" PVC Conduit. Provide a conduit "Air Break" before entering the building.
4. Also provide intrinsic safety barriers in the pump control panel for each float. These intrinsic safety barriers should be B/W Controls, Series 5510 or approved equivalent.

Schedule C

PLC & RTU Programming

In general, the Direct Logic PLCs and the ACE3600 RTUs are to be programmed to perform the same functions as the Bristol Babcock RTUs and the Allen Bradley PLCs that they replace. The ACE3600 RTUs are to utilize the Motorola Generic Applications for communications over the Motorola Radio Telemetry System Network. Both will provide process data, status & control functions and alarms to the new Proficy HMI/SCADA software, which replaces the Intellution FIX-32 software.

The new Direct Logic PLCs at the Headwork's Bldg., Clarifier Bldg., Filter Building and Oxidation Ditch are to be programmed to perform the same functions as the Bristol Babcock 3330 RTUs they replace. The exception to this is in the Clarifier Bldg. and the Oxidation Ditch. One VFD, DO Analyzers and wiring has been added in the Clarifier Bldg., but never completed, to control the dissolved oxygen level in the Oxidation Ditches by controlling the speed of the Aerator Motors. The DO Control programming and any additional hardware, with the exception of a second VFD, is to be added and tested to control both ditches.

The new ACE3600 RTUs at the Wastewater Pump Stations at Sandy Hook, Taunton Lake Road, Baldwin Road & Hanover Road are to be programmed to perform the same duplex pump control and alarming as the Bristol Babcock 3330 RTUs they replace. In addition, new control hardware and RTU I/O has been specified to accommodate the following additions to the software:

1. Individual pump power consumption each time they are started.
2. Backup Float Control logic and alarming.
3. Individual Generator alarms. (High Water Temp., Low Oil Press., Over-Crank & Over-Speed)
4. Generator Fault Reset from the SCADA Central.
5. Generator Test Start from the SCADA Central.
6. Individual Pump Start & Stop from the SCADA Central.

The new ACE3600 RTU at the Wastewater Pump Station at Hawleyville is to be programmed to perform the same pump control functions as the Allen Bradley PLC it replaces. In addition, new RTU I/O has been specified to accommodate the following additions to the software:

1. Individual pump power consumption each time they are started.
2. Individual Generator alarms. (High Water Temp., Low Oil Press., Over-Crank & Over-Speed)
3. Generator Fault Reset from the SCADA Central.
4. Generator Test Start from the SCADA Central.
5. Individual Pump Start & Stop from the SCADA Central.

The new ACE3600 RTU at the Fairfield Hills Partial Flume is primarily for telemetry purposes. It is to provide Flow Rate, Flow Total and pH analog data to the Proficy HMI/SCADA system.

The new ACE3600 RTU at the Fairfield Hills Water Treatment Plant is to be programmed to perform the same pump control functions as the Allen Bradley PLC it replaces. In addition, new RTU I/O has been specified to accommodate the following additions to the software:

1. Individual pump power consumption each time they are started.
2. Individual Generator alarms. (High Water Temp., Low Oil Press., Over-Crank & Over-Speed)
3. Generator Fault Reset from the SCADA Central.
4. Generator Test Start from the SCADA Central.
5. Plant Alarms Reset from the SCADA Central.
6. Individual Pump Start & Stop from the SCADA Central.

The new ACE3600 RTU at Well House #7 is primarily for telemetry purposes. It is to provide Flow Rate & Flow Total analog data and Fire & Intrusion Alarms to the Proficy HMI/SCADA system.

The new ACE3600 RTU at the Water Storage Tank (Bunkers) is primarily for telemetry purposes. It is to provide Tank Level & Chlorine Residual analog data and Fire & Intrusion Alarms to the Proficy HMI/SCADA system.

HMI/SCADA Programming

The new Proficy HMI/SCADA software is to perform essentially the same functions, with some additions, as the Intellution FIX-32 software it will replace.

The database will contain all of the same process variables & alarms, but will reflect the changes in the remote hardware. There will be additional variables & alarms for the five Wastewater Pump Stations, as defined in their respective RTU Programming described above. All of the pertinent variables & alarms from the Fairfield Hills Water Treatment Plant RTU will be added, along with those from the Well House #7 RTU and the Water Storage Tank RTU, as defined in their respective RTU Programming described above.

Process displays will contain the same information, but in the new Proficy HMI/SCADA format. Some displays will need to have additional information added, such as the Wastewater Pump Station Backup Float Control and the Generator alarm & control functions. Additional displays will need to be added for the Fairfield Hills Water Treatment Plant, Well site and Water Storage Tank.

Current FIX-32 Displays

WPCF Plant Displays:	WPCF Overview (Menu)
	Duplex Pump Station at Sandy Hook
	Duplex Pump Station at Taunton Lake Rd
	Duplex Pump Station at Baldwin Road
	Duplex Pump Station at Hanover Road
	Duplex Pump Station at Hawleyville

	Headworks
	Oxidation Ditch with Pop-Up Control Menus
	Clarifier
	Sludge Pumping with Pop-Up Control Menus
	Filter and U.V. Disinfection
	Plant Drain System
	Plant Water System
	Belt Thickener & TWAS Pumps
	Polymer Blending System
	Sodium Hydroxide Feed System
	Sodium Hypochlorite Feed System
	Alum Solution Feed System
	Permanganate Feed System
	Laboratory Data Entry
	Flow Totalization & pH
Water System Displays:	Treatment Plant Overview (New)
	Well Pumps & Clear Well (New)
	Booster Pumps (New)
	Chlorine Dosing System (New)
	Distribution Storage Tank (New)

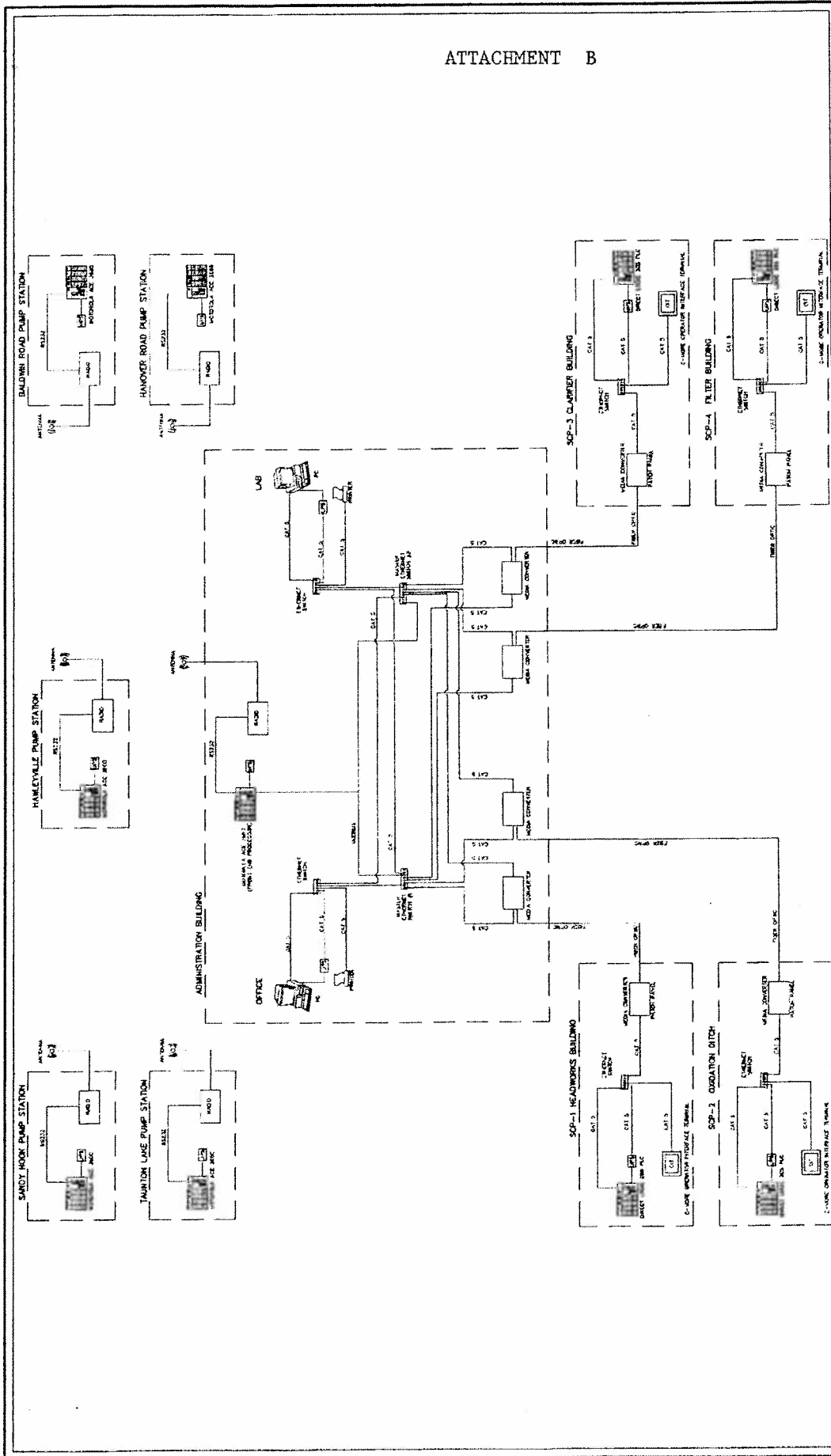
The “WPCF Overview” (Menu) is to be replaced by an Overview Display that includes a map of Newtown showing the location of each Wastewater Pump Station & Fresh Water System Site. From this screen, the display for any Wastewater Pump Station or Fresh Water System Site can be selected, including the WPCF Plant Overview that shows the Treatment Plant layout and allows the operator to select the Building or System Display he wants.

The current displays have an alarm display area at the bottom of the screen. This is to be replaced by a “Pop-Up” Alarm Window and audible tone that is triggered any time an alarm occurs. The “Pop-Up” is to include an Alarm Acknowledge Button and require that the alarm be acknowledged to close the “Pop-Up” & silence the audible tone! Also, an Alarm History Display is to be added which can be accessed from the Overview Display. This Alarm History Display will show all alarm activity and alarm acknowledgments going back in time until cleared.

Daily Plant Reports

The content of the Daily Plant Reports will remain essentially the same. Process data collected from the in Plant PLCs and the ACE3600 RTUs will be stored in the Proficy HMI/SCADA Historical Database on an hourly basis. The reports consist of seven pages in landscape format, by the hour (midnight to midnight) for the day.

ATTACHMENT B



DATE: _____

FIG. 1

TOWN OF NEWTON

SYSTEM ARCHITECT DIAGRAM

SCADA SYSTEM UNDERLINE

DATE: _____

FIG. 1

TOWN OF NEWTON

SYSTEM ARCHITECT DIAGRAM

SCADA SYSTEM UNDERLINE

DATE: _____

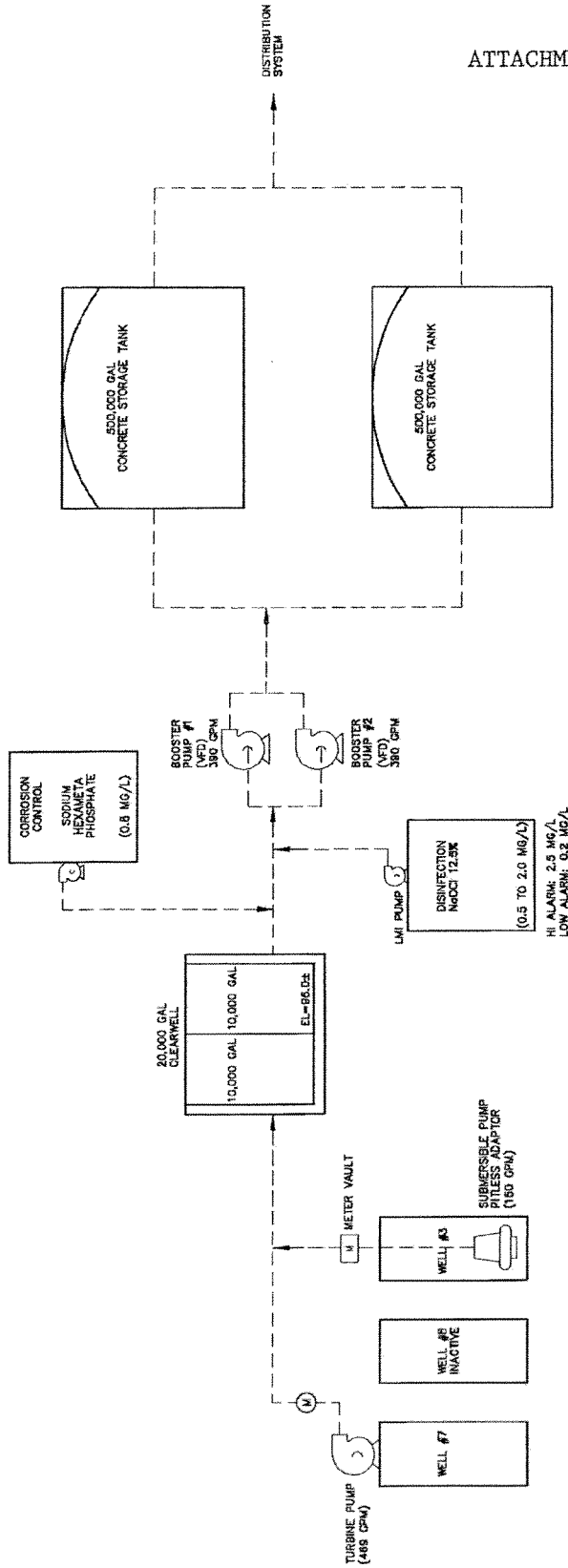
FIG. 1

TOWN OF NEWTON

SYSTEM ARCHITECT DIAGRAM

SCADA SYSTEM UNDERLINE

ATTACHMENT C



OPERATION SET POINTS		
BOOSTER PUMPS*	CLEARWELL LEVEL	STORAGE TANK LEVEL
LEAD ON	8 FT	14 FT
LEAD OFF	5 FT	15.2 FT
LAG ON	8 FT	13 FT
LAG OFF	5 FT	15.2 FT

* BASED ON LEAD/LAG ALTERNATE

CHEMICAL FEED	STORAGE TANK LEVEL
CHLORINE PUMP	ON
PHOSPHATE PUMP	14.0 FT
MIXER	15.2 FT

OPERATION SET POINTS AT CLEARWELL LEVEL	
HIGH ALARM	10.5 FT
LOW ALARM	4.5 FT
WELL #3	
LEAD ON	8 FT
LEAD OFF	10 FT
WELL #7	
LAG ON	8 FT
LAG OFF	9 FT

PROJ. No: 1902361010
DATE: APRIL 2011

FIG.1

TOWN OF NEWTOWN

SCHEMATIC FLOW DIAGRAM

FAIRFIELD HILLS CAMPUS WATER SYSTEM

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SCALE:	HORIZ: N.T.S.
	VERT:
DATUM:	HORIZ:
	VERT:
	GRAPHIC SCALE

NON-COLLUSION AFFIDAVIT OF BIDDER

State of: _____)

) SS:

County of: _____)

_____; being first duly sworn, deposes and says
that:

- 1) He is (owner, partner, officer, representative or agent) of the Bidder that has submitted the attached Bid:
- 2) He is fully informed regarding the preparation and contents of the attached Bid and of all pertinent circumstances regarding such Bid:
- 3) Such Bid is genuine and is not a collusive or sham Bid:
- 4) Neither the said Bidder nor any of its officers, partners, owner, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived, or agreed, directly or indirectly with any other Bidder, firm or person to submit a collusive or sham Bid in connection with the Contract for which the attached Bid has been submitted or to refrain from bidding in connection with such Contract, or has in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other Bidder, firm or person to fix the price or prices in the attached Bid or of any Bidder, or to fix any overhead, profit or cost element of the bid price or the bid price of any other Bidder or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage with the Town of Newtown or any person interested in the proposed Contract.
- 5) The price quoted in the attached Bid is fair and proper and is not tainted by collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest.

Signed: _____

Title: _____

Subscribed and sworn before me this _____ day of _____.

Notary Public: _____

My Commission expires: _____